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Comments:

From the SCS Chief

Farm Managers—A Special Public

A teacher of public relations told a U.S. Department of Agriculture audience recently that "there is no such thing as the general public—only specialized publics."

This is certainly true, and one segment of the rural public that may require more attention from Soil Conservation Service people and conservation districts is the professional farm manager.

Agri Finance magazine reports that there are more than 1,000 farm management organizations with more than 3,400 managers. About two-thirds of these organizations are banks.

The American Society of Farm Managers and Rural Appraisers reports that its members manage 15 percent of the Nation's corn and soybean production.

Farm managers generally work for absentee owners. "Most of their clientele are urban professionals and retirees who inherit the family farm, want to keep it—but don't know what to do with it," *USA Today* reported last fall.

There's been some recent concern by conservation district officials that absentee landlords practice less conservation than those who live on the land.

We don't know whether this is true or not. We do know that the farm managers we've talked to say they are strong supporters of soil and water conservation. They say they work hard to sell the absentee owners they work for on installing modern conservation practices.

David E. Peterson, the new president of the American Society of Farm Managers and Rural Appraisers, has suggested that we meet in 1984 to discuss ways to improve communications between SCS and professional farm managers. He's not only a strong supporter of conservation, but he's also familiar with what we do because he's worked with many of you—as a farm manager and as president of his local soil conservation district board.

We welcome the chance to get better acquainted with Mr. Peterson and the people he represents, and I would personally welcome any suggestions from SCS field people and district officials for working more productively with professional farm managers.



Cover: Alternating strips of corn and soybeans on the rolling hills of this Carroll County, Md., farm protect the soil from water erosion.

John R. Block
Secretary of Agriculture

Peter C. Myers, Chief
Soil Conservation Service

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Editor, Judith E. Ladd

Associate Editor, Nancy M. Garlitz

Assistant Editor, Donald L. Comis

Editorial Assistant, Ann P. Serota

Design Consultant, Christopher Lozos

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No-Till, A Good Choice After PIK

This fall, five northwest Iowa counties sponsored a field day to test ways to plant on land that was formerly conservation use acreage under the U.S. Department of Agriculture's (USDA) Payment-In-Kind (PIK) program while leaving 50 percent of the soil surface covered with the previous cover crop's residue.

That's how much residue farmers must leave to qualify for cost-share funds from Iowa's Wind Erosion Control Incentive Program. The field day was arranged to answer questions from conservation farmers who have experience with planting into corn and soybean residue but not cover crop residue.

Since USDA has announced the end of the PIK program for all crops but wheat, farmers had many questions about bringing their conservation use acres back into production while protecting the soil from erosion.

Soil Conservation Service District Conservationist Russell Hatz in Clay County,

Iowa, was one of the organizers of the field day, working through the local soil conservation districts along with other SCS personnel. The Iowa State University (ISU) Cooperative Extension Service and extension agents in five counties also helped to organize the field day.

Al Swanson, a local farmer, offered his 60-acre PIK field for the planting demonstrations. A major seed company that has a research station adjoining Swanson's field donated most of the seed and helped to sponsor the field day.

On the day of the demonstration, about 500 people rode in a caravan of hay wagons to see several types of conventional and no-till planters plant soybeans into strips of different cover crops. The crops included alfalfa, red clover, sweet clover, alsike clover, sudangrass, oats, and a pasture mix that was mostly alfalfa and orchardgrass.

Hatz says, "We tested hundreds of different crop-tillage-chemical-equipment combinations. The farmers got to see no-till planters work well even in the heavy growth we had this fall. We

assume there will be only half as much residue left after this winter."

But ISU Extension Crop Specialist Paul Kassel was surprised to see how little residue was left after just one disking. He and Hatz see only three ways farmers can be sure of having at least a 50-percent residue cover after spring planting: have a good stand of oats in the summer, with good regrowth in the fall; plant oats in the fall; or use no-till. Those with good stands of oats and fall regrowth may have enough residue to be able to disk or chisel plow in the fall and cultivate once in the spring, but those who do not can't risk any tillage.

Kassel says orchardgrass presents special problems because it is difficult to control economically with herbicides.

Iowa's frost made sure the fall-planted soybeans didn't grow, but USDA hopes that no-till use will increase with this spring's soybean and corn crops.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*,
SCS, Washington, D.C.

New Stamp To Be Issued at NACD Convention

Those attending the National Association of Conservation Districts (NACD) convention in February in Denver, Colo., will be able to buy first-day covers of the soil and water conservation commemorative stamp.

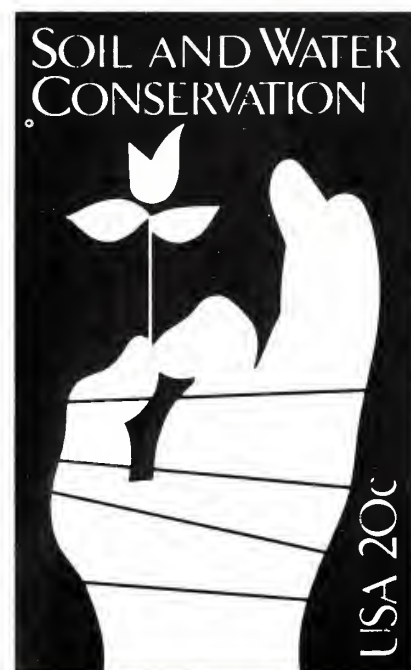
The U.S. Postal Service will issue the stamp in a ceremony at the start of the 38th annual NACD convention. On that day, Monday, February 6, 1984, the stamp will be on sale in Denver only. The next day the stamp will be available nationwide. A temporary post office in the hotel lobby will hand-cancel stamped envelopes with the words, "First Day of Issue." NACD will sell envelopes with a special design for these first-day covers.

The postmaster of Denver, Colo., will

be master of ceremonies for the presentation of the stamp. Soil Conservation Service Chief Peter Myers and an official of the U.S. Postal Service will speak.

The stamp marks the 50th anniversary of the soil and water conservation movement in the United States. It shows a hand holding a flower, symbolizing the protection of natural resources. The flower is a bright red, the leaves and stem a rich green. The top of the hand is white, as is all the lettering on the stamp. There is one blue band across the hand to represent water and three earthtone bands for layers of soil. The background is black.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*,
SCS, Washington, D.C.



Soil Erosion Reduces Yields

Exactly how much are crop yields affected by soil erosion? Ben F. Hajek, soil scientist in the Department of Agronomy and Soils at Auburn University, Auburn, Ala., is trying to help answer that question. Hajek has released preliminary results from a 5-year research project that he is conducting with the Alabama Agricultural Experiment Station in cooperation with the Soil Conservation Service.

Said Hajek, "When the surface soil on cropland has been eroded to the extent that the subsoil begins mixing with the surface soil, problems develop. Our research has shown that in many cases, yields are reduced by 15 percent for each additional 10 percent of subsoil mixed with surface soil."

Studies of the effects of soil erosion on yields for soybeans and corn have been underway since 1981, and cotton studies were begun last year. Research results indicate that corn yields are more seriously affected than soybeans, and results from 15 cotton fields also show trends of reduced yields on eroded land.

SCS district conservationists and soil scientists helped to locate 110 plots throughout the State for the research project. One requirement for a plot to be included in the study is that at least two levels of erosion—slight, moderate, or severe—must be occurring on each. The studies are conducted under normal

farming practices in cooperation with participating farmers.

At the plots, soil scientists measure the depth of rill erosion and the thickness of the surface layer to estimate the amount of soil erosion that has taken place. Samples of soil from different depths are analyzed in a laboratory to determine the soil's water-holding characteristics. Crop yields from the test plots are measured and recorded.

SCS State Soil Scientist John Meetze said, "The research results from this project will tell farmers how much erosion is costing them in reduced yields."

SCS State Conservationist Ernest Todd, who headed a nationwide study under the Soil and Water Resources Conservation Act of 1977 (RCA), said, "Alabama's cropland is losing an average of 10 tons per acre per year to erosion. We must convince farmers that soil erosion costs them money in reduced yields now and in the loss of their land's future productivity."

"The research results from this project will help us to show farmers that they need to control soil erosion. The project results will also help us to better plan cost-effective measures that farmers can use to reduce erosion to tolerable rates."

Funding for Hajek's work comes from RCA funds and the Alabama Agricultural Experiment Station.

Morris S. Gillespie,
public affairs specialist, SCS, Auburn, Ala

EPA Grant Used to Test Soil-Saving Practices

During the worst of last summer's drought, there was a place in Ohio where rains came on demand, and the demand was every day.

The place was Defiance County in northwest Ohio, where scientists were using a rainfall simulator to compare runoff from conventional and ridge-tilled plots. Ridge tillage is an alternative to fall plowing on flat, fine-textured, poorly drained soils. With ridge tillage, farmers plant on ridges they built when the previous crop was cultivated. Only a narrow strip of soil is disturbed when the crops are planted and all residue from the previous crop is left on the surface between the rows. The scientists were also studying the physical and chemical makeup of sediment in the runoff, with the different tillage methods and amounts of residue.

The experiment was part of the Defiance County Soil and Water Conservation District's (SWCD) participation in a 4-year soil erosion and water quality control program funded by the U.S. Environmental Protection Agency (EPA). One of the main objectives of the program is to demonstrate new and innovative conservation practices on the mostly level, clayey soils on lakebeds that make up much of this agricultural county.

The U.S. Department of Agriculture's National Soil Erosion Laboratory at Purdue University in Indiana provided the rainfall simulator and used part of the EPA grant to hire a team to set up and operate the simulator. The machine was erected over one 10- by 35-foot plot at a time and programmed to provide a specific intensity of rainfall. About 40 plots of Paulding clay, a relatively flat soil with very slow permeability and much runoff, were tested over a 6-week period.

Each of the plots, received more than 7,000 gallons of water each day during testing. The rains, pumped through tubing to nozzles over the test plots,



Charles Montgomery, Soil Conservation Service soil scientist, left, and Ben F. Hajek, soil scientist in the Department of Agronomy and Soils at Auburn University, Auburn, Ala., measure the depth of rill erosion on cropland as part of a research project to determine how much soil erosion affects crop yields.

came three times a day, for 30 minutes at a time.

The timed rainfall enabled scientists to test runoff from dry, wet, and very wet plots. Soil Conservation Service District Conservationist Norman Widman, Defiance County, said, "The runoff was loaded with sediment even though the slope was less than 0.5 percent." This reinforced the findings of researchers at Ohio State University in Columbus, Ohio, that the fine particles of Paulding and other clayey soils are easily transported even from relatively level sites.

Bob Nattermann, chief of the Purdue team, said, "We took between 2,500 and 3,000 samples, almost 500 each week for 6 weeks." A pit, dug at the lower end of the test plot, served as a station to collect runoff samples. Each sample was taken in a marked plastic bottle as the runoff water poured through a metal flume into the pit.

The samples are being analyzed, some by the National Soil Erosion Laboratory and others by Ohio State University's agronomy department.

Although the test plots were small, Widman said the data obtained from the samples can be projected over large areas of the county with similar slopes and soils. "One of the important tests," said Widman, "is the comparison of runoff from conventional and ridge-tilled plots. We don't have the results from the experiment yet, but we expect to have figures that show tremendous soil savings with no-till on ridges."

Robert K. Kissler,
public affairs specialist, SCS, Columbus, Ohio

Are We Counting All of the Erosion?

Soil erosion estimates based on the Universal Soil Loss Equation, the Wind Erosion Equation, or both, do not account for all types of soil erosion. One type of erosion that the equations do not consider is ephemeral cropland gully erosion. Ephemeral gullies are short-term or seasonal gullies formed by concentrated water flow from snowmelt or rainstorms.

To develop methods of estimating soil loss from these short-lived gullies, the Soil Conservation Service has begun studies of ephemeral cropland gully erosion in several States around the country. One study is being made in Aroostook County, Maine, an area to which SCS assistance is being targeted for erosion control.

Aroostook County cropland is prone to ephemeral gully erosion because of intensive cultivation, the noncohesive silty and sandy soils, rolling terrain, periods of concentrated water flow from snowmelt and intense rainfall, and the freezing and thawing of the soil which makes it less dense and thus more susceptible to erosion.

"The study in Maine has six objectives," said SCS Sedimentation Geologist Thomas Iivari in Chester, Pa. "They are: to quantify soil loss in tons per acre from ephemeral gullies; define where and when this kind of erosion occurs; relate ephemeral erosion to non-point water pollution; develop a data base from the information collected in the field; develop a way to work ephemeral erosion into existing prediction models; and prescribe land treatment practices to specifically control ephemeral soil erosion." Specially designed water disposal systems are expected to be one control measure.

SCS National Sedimentation Geologist William Mildner in Washington, D.C., said, "In general, an ephemeral cropland gully is larger than a rill and smaller than a gully. It usually occurs at the junction of rills that form a branching, or tree-like, pattern of

channels. An ephemeral gully appears on a cultivated field during the planting or growing season, when the ground is not frozen or snow covered, and is erased by cultivation. After one of these gullies has existed for a few years, the area from which soil has been moved can be 100-feet wide or more."

There are two methods for measuring ephemeral cropland gully erosion. The first method involves determining the total volume of soil moved by measuring the voided area and dividing by the period in which the gully has been in existence. The second method, and the one that is being used in the study in Aroostook County, is to measure the soil moved by ephemeral gullies each year for several years.

In the first year of the Maine study, which began in spring 1983, field survey teams in the northern part of Presque Isle Township in Aroostook County recorded data showing that one ephemeral gully, with a cross section greater than 72 square inches at the head, formed for every 5.7 acres of cropland during the fall and spring measuring period. One gully had a soil loss of 218 tons during the measuring period. That is equivalent to 22 fully loaded, 10-yard dump trucks.

SCS is working with scientists from USDA's Agricultural Research Service on developing an equation to predict soil loss from ephemeral cropland gully erosion. They expect to have a field tested equation or equations available in 2 or 3 years.

John Badger,
coordinator, St. John-Aroostook Resource Conservation and Development Area, Presque Isle, Maine

Erosion Reports Put Conservation on Target

To help farmers, planners, and its own conservationists pinpoint excessive soil loss in 12 Florida Panhandle counties, the Soil Conservation Service is collecting erosion data on fields, gullies, roadsides, and forest lands and publishing an erosion report for each county. These studies are sponsored by the soil and water conservation districts and county boards of commissioners with assistance from the U.S. Department of Agriculture's Forest Service.

"About 85 percent of all soil erosion in Florida occurs in the Panhandle," said Ottie Johnson, SCS water resources staff leader in Gainesville, Fla. Much of that erosion exceeds tolerable losses of about 5 tons per acre per year. According to Johnson, that is because much of the sloping, easily erodible Panhandle area is used for row crops. "We needed to document where the worst erosion problems were and how they could be reduced," said Johnson.

The erosion studies cover erosion on all cropland and pastureland and much of the forest land and roadsides. To collect the data, each site was visited by an SCS conservationist. Based on current land use, the reports give average annual erosion rates, identify alternative conservation practices and combinations of practices for reducing serious erosion problems, provide cost estimates of installing conservation practices, provide estimates of the effectiveness of the practices, and identify sources of technical and financial assistance available to landowners for applying conservation measures on their land.

Each report consists of a summary booklet and two appendixes. Appendix I, "Individual Field and Critical Area Erosion Data," contains aerial photographs with individual crop and pasture fields located and numbered. Appendix I also contains computer generated lists of individually numbered fields with their use, current erosion rate and phase, average annual soil loss, and other information. Tables further classify soil

losses according to soil type, crop, and hydrologic unit. Gully and roadside erosion sites are also delineated and numbered on the aerial photographs.

Appendix II, "Costs and Benefits of Soil Conservation Practices," contains data identifying the costs and benefits of soil conservation practices and the erosion reduction that can be expected from installing each practice or combination of practices. The data show that in many places, switching to conservation tillage would lower costs and reduce soil losses by about two-thirds.

The erosion reports for Santa Rosa County and Escambia County have already been published and the reports for Okaloosa, Walton, Holmes, Washington, Jackson, Calhoun, Gadsden, Leon, Jefferson, and Madison Counties are scheduled to be published by late 1984.

Johnson says of the erosion reports, "This kind of site specific survey will enable landowners and government agencies to target soil conservation measures and funding to where they can do the most good."

Art Greenberg,
public affairs specialist, SCS, Gainesville, Fla

Soil Surveys Go to the Caroline Islands

In the first part of 1983, the Soil Conservation Service published soil surveys of the Federated States of Micronesia—Ponape, Kosrae, Truk, and Yap—and the Republic of Palau, which lie in the Caroline Island group in the western part of the Pacific Ocean. Last July, SCS workshops in Ponape, Kosrae, and Truk introduced the surveys to potential users, including Peace Corps teachers, consultants, engineers, and employees of government departments of transportation, public health, forestry, and agriculture.

The people at the workshops were enthusiastic about the soil surveys, which contain soil descriptions and interpretive tables important to farmers,

foresters, engineers, and others. The islands that workshop participants represented have a wide range of soil and terrain, with woodland and subsistence farming plots dominating the landscape. Questions on land use have become more pressing as populations increase and outer-island people move to the larger villages.

The workshops provided basic information on soil survey mapping procedures, soil terminology, step-by-step instructions on locating specific information in the surveys, and how to use soil survey information. The workshops covered conservation practices that can be used on the small farms common to the islands and the use of laboratory data and interpretations tables in analyzing crop production and selecting septic tank drainage fields, sources of topsoil, agricultural drainage, and reservoir areas. Another subject covered was how to transfer information learned about one soil to similar soils on other parts of the island.

Using soil profiles exposed by road cuts, the workshop participants studied soil horizons and soil structure, texture, color, and pH. They also learned how to take soil samples for laboratory testing. Because soil fertility is a major concern on the islands, the group's questions often centered on the pH and organic matter content of the soil.

The workshops stimulated interest in conservation and land use planning and in using soil survey information to develop new plans and update old ones. Firms working on contracts with the island governments are already using the maps and tables.

James Ramarii, forester for Truk State, plans to consult soil surveys as he develops interpretive maps for forestry. Jackson Phillip, assistant State agriculturist in Ponape, will use what he learned at one of the workshops in determining pH for soils that he is testing. Hilary Morris of the Community College of Micronesia will use the soil survey publication in his crop production classes. In Kosrae, agriculturist Critten Phillips and forester Brad Miller will use

the surveys to study soil characteristics that affect plants used for erosion control and for pasture.

Having received highlights of information usually covered in a full semester course in soils, workshop participants can help others on their islands use the soil surveys and find additional information. Similar workshops for Palau and Yap are planned for the near future.

Paul A. Bartlett,
soil scientist, SCS, Honolulu, Hawaii

Joan B. Perry,
resource conservationist, SCS, Mangilao, Guam

Emergency Work Takes Cooperation

On June 28, 1983, in 7 hours, up to 7 inches of rain fell on parts of Clinton County, Pa. The rain eroded stream-banks, clogged channels, and damaged roads, bridges, and buildings.

Within 24 hours, Soil Conservation Service teams were surveying damages and planning stream clearance and restoration. Almost \$400,000 was made available through Section 216 of the Flood Control Act of 1950. In less than a day after the storm, equipment operators were working to clear debris-filled channels, and in 6 weeks, stream stabilization work was completed.

SCS District Conservationist Ellen Dietrich credited the success of the emergency work to outstanding cooperation. "I can't single out any person or agency," she said. "They all pitched in and got the job done."

Dietrich said that Clinton County Commissioner Dan Reinhold put emergency plans into action as the rains eased. He is in charge of the Bald Eagle-Fishing Creek Flood Warning System and went to the field with Dietrich to survey damages.

Clinton County Conservation District Manager Sue Foust and Secretary Carol Shaffer arranged for the State Department of Environmental Resources to issue temporary permits for stream

restoration and bridge replacement work. SCS Conservation Technician Tom Bittner served on the planning team and served as an inspector wherever he was needed, often putting in long hours.

"Township government was well prepared," noted Dietrich. "We had a similar storm a couple of years ago. The township supervisors knew where to go for help, what needed to be done, and what their responsibilities were." Five townships—Woodward, Castanea, Bald Eagle, Beach Creek, and Allison—were involved. Supervisors located damage centers and helped get easements from landowners for stream stabilization work.

USDA's Agricultural Stabilization and Conservation Service (ASCS) employees Jann Chapman and Janice Keller provided office space, ran copies of plans and contracts, and answered telephones. They also helped to have money approved through the ASCS Emergency Conservation Program for farmers.

Dietrich had nothing but praise for her fellow SCS employees, such as her co-worker, Conservation Technician John Harbach, and those from neighboring counties, the area office, and the State office. "They all worked hard and put in long hours," said Dietrich. She summed it up this way: "It isn't so bad when everyone carries their share and provides a service to the landowners. At a time like this landowners need help, and it makes you feel good that you can help them."

The Clinton County story is not an isolated one. A similar situation happened in Bedford County, where 2 weeks earlier a hard storm had hit.

The Bedford Springs Resort Hotel suffered a \$2 million loss. Eighty cars were swept out of a parking lot and a highway was washed out as a creek cut a new course through the resort. Tennis courts were destroyed and swimming and golf areas were heavily damaged.

Three weeks later, the stream was back in its channel, the road was rebuilt, the parking lot was paved and filled with cars, and the tennis courts, swimming

pool, and golf course were filled with visitors, most of whom were not aware of the devastating storm that had occurred 3 weeks before.

Frederick Bubbs,
public affairs specialist, SCS, Harrisburg, Pa

Video Game Teaches Conservation

The Conservation Tillage Information Center (CTIC) plans to introduce a soil conservation video game at the National Association of Conservation Districts (NACD) convention February 5-9 in Denver, Colo.

The CTIC is a clearinghouse for information on conservation tillage, established as a special project of NACD and administered in cooperation with agribusiness, government agencies, private foundations and organizations, and farmers.

The computer game challenges players to beat the computer by selecting a better combination of farming practices that produce higher profits per acre while keeping soil losses at or below a tolerable level.

The game is a fun part of a computer program that should also enable Soil Conservation Service and conservation district personnel to predict soil loss and profits on farmers' fields. The original game was developed for Iowa as part of a soil conservation lesson by a former vocational education teacher who now runs a computer software firm.

One of CTIC's corporate supporters is paying the costs of modifying the original program for use nationwide.

CTIC's experience with the original game proved it is a fun and highly effective way to spread the conservation tillage message.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*,
SCS, Washington, D.C.

Helping the Past Have a Future

How could a meandering Mississippi creek threaten a national historic landmark? It could and did, last spring. To help preserve Grand Village Historical Park for future generations of visitors and archeologists, the Soil Conservation Service took emergency action.

Grand Village Historical Park is in Natchez, Miss. The Mississippi Department of Archives and History (MDAH) operates the park. Until 1730, the site was the center of Natchez Indian life. Today, visitors can tour three mounds and a level plaza where the Indians held many religious ceremonies and social events. Visitors can also see a reconstructed Natchez homestead.

For years, three sources of gully and streambank erosion steadily washed away parkland and artifacts. Surface runoff from an adjacent subdivision sliced gullies through erodible loess soil in the park. The flow from unprotected subsurface drain outlets cut other gullies. During storms, the swollen waters of St. Catherine Creek tore huge chunks from its vertical banks looming 40 feet above the channel.



The banks of this creek in Natchez, Miss., were smoothed and lined with riprap to protect a historical park from soil erosion.

In the 1700's, the banks of St. Catherine Creek were only a few feet high, according to Jim Barnett, park superintendent. How did the shallow meandering creek gain the potential to become a rampaging torrent? The answer lies in the effects of land use during—but mainly after—Natchez occupation.

About 1870, according to Barnett, landowners on the east bank of the Mississippi River cut a trench about one-half mile southwest of Natchez to force the creek to enter the river there. Until then, the creek had flowed south for several miles into a swampy lowland before its confluence with the river.

SCS District Conservationist Bryan Stringer explains that the trench caused St. Catherine Creek to begin cutting into the erodible loess that mantles the region. The trench also increased the velocity of the creek's flow and its erosion of the creek's bed. This degradation advanced upstream, as the creek sought to reestablish a stable grade.

The combination of increased runoff and degradation has left Grand Village near the edge of eroding, vertical banks 20 to more than 40 feet high. The once-narrow channel is more than 100 feet wide.

The Grand Village site has interested archeologists for more than 50 years. During major excavations in 1972-73, a large volume of colluvium between the mounds was scooped out. Removing this material lowered the ground surface of parts of the plaza, so subsurface drains were installed. But the three concrete-pipe drain outlets below the plaza were left unprotected.

Drainage water from these outlets cut gullies as it flowed to the creek; but after a few years, the gullies seemed to have become stable, according to SCS State Engineer Peter Forsythe. In the unusually wet winter of 1982-83, however, the threat of erosion became critical.

During one storm in April, said Forsythe, the flow in the creek filled the channel width and reached 16½ feet up the sides of the vertical banks. A 15-foot

wide chunk of the bank slid off into the channel, and the gullies began growing rapidly, advancing towards the plaza and mounds.

In May 1983, the MDAH and the Adams County Board of Supervisors asked SCS for help in protecting the historical landmark. In addition to technical assistance, SCS was able to provide funding for the project through the 1983 Jobs Act (Public Law 98-8). The project employed 15 people to protect the drain outlets and stabilize a 700-foot section of vertical bank on the west side of the creek.

In a separate project funded by the State, runoff from the subdivision was rerouted to the creekbed via buried concrete pipe. By the end of July, the entire project was complete.

Gullying by the drain outlets was stopped by using corrugated metal pipe to extend them further downhill, within 130 feet of the creek. From the new outlets, waterways lined with grouted riprap safely carry drain water the rest of the way.

Earthfill, filter cloth, and a 2-foot-thick layer of riprap form the primary protection of the vertical bank. Atop this foundation are three earthen benches that "step up" near the top of the vertical bank. Their upper surfaces slope slightly away from the channel. Their steeper, channel-facing slopes are seeded to common bermudagrass and 'Pensacola' bahiagrass. The seeding is temporarily protected by a mulch of hay and straw anchored by an asphalt spray.

With surface runoff rerouted, drain outlets protected, and vertical bank stabilized, Grand Village now appears out of danger. Somewhere beneath the protective—and protected—colluvial blanket lie the remaining signs of Natchez culture. There they can safely await discovery by future explorers of the past.

Kathy Windham,
information assistant, SCS, Jackson, Miss.

John Monroe,
soil conservationist, SCS, Canton, Miss.

National Geographic Society Funds Recovery of Artifacts at Pilcher Creek

The National Geographic Society (NGS) has contributed a \$15,000 grant to the Soil Conservation Service to continue funding archeological excavations at the future Pilcher Creek dam site in Union County, Oreg. Construction of the dam is part of the Wolf Creek Public Law 566 small watershed project to improve the use of existing water supplies.

In 1981, during an environmental assessment for construction of the dam, a 10,000-year-old archeological site was discovered. (See article in December 1982 issue of *Soil and Water Conservation News*.) In 1982, artifacts were recovered from a 10-meter-square area of the site, and this past summer, with NGS funding, recovery work continued under the direction of David Brauner, an archeologist with Oregon State University (OSU).

Working under contract with SCS, Brauner conducted this most recent excavation project as a summer field school for OSU students. Said Brauner, "The Pilcher Creek site is the oldest, well-defined upland base camp recorded in the Southern Plateau Region of North America. It offers the first opportunity to investigate the upland culture of the 'Windust' people who lived 10,000 to 7,000 years ago. The site is critical to our understanding of early human migrations into North America because the 'Windust' people may have been the pioneering population in the Northwest."

Frank Reckendorf, SCS environmental resource specialist at the West National Technical Center in Portland, Oreg., reports that artifacts from three cultural time periods have been discovered at the site. They are: "Windust," the oldest; "Cascade," dating from 7,000 to 4,000 years ago, and "Tucannon," dating from 4,000 to 2,500 years ago. One of the most significant finds said Reckendorf was evidence indicating that the "Windust" people were making pendants for personal adornment. This

find is among the earliest evidence of artwork in the Pacific Northwest.

Pat Brown, SCS secretary to the State biologist in Portland, took 5 days of leave-without-pay to help with the excavation last summer and to gain a better understanding of the cultural resources work that SCS is involved in. Brown said that the archeology class that she had taken at OSU the previous spring combined with her work at the Pilcher Creek site have given new meaning to her work with SCS contracts and reports dealing with protecting cultural resources. Also working with the OSU students to uncover artifacts

were a high school student from Annapolis, Md., Andrew Falk, who plans to study archeology in college, and his mother, Carol, and sister, Hayley.

After the Pilcher Creek dam is completed, but before the reservoir fills with water, the important archeological sites will be covered with a 12-inch layer of sand and gravel. This blanket will protect the sites from erosion by wave action and preserve the sites for future study.

Diane Gelburd,
national cultural resources specialist, Social
Sciences, SCS, Washington, D.C.



Archeology students and volunteers recover artifacts from a 10,000-year-old archeological site in Union County, Oreg. The site was discovered during an environmental assessment for the construction of Pilcher Creek dam, a Public Law 566 small watershed project.

News Briefs

Master Conservationist Sells \$10.2 Million Horse

Don Johnson, owner of a racehorse farm in central Kentucky, recently broke a world's record by selling a son of Northern Dancer, one of the world's great racehorses, for \$10.2 million. The previous record selling price for a yearling was \$4.2 million.

Johnson is a man who wears several different hats. He is a successful coal operator, a heavy equipment operator, a thoroughbred horse breeder, and a master conservationist.

Johnson, a native of Pike County, Ky., started in the coal business in the fifties. Being a conservationist first and a miner second, he insisted on proper reclamation for the lands he mined. For 10 years he was head of the Kentucky Surface Mine Reclamation Association, an organization to promote better reclamation on mined lands.

In 1974, when Johnson decided to buy farmland in Fayette County near Lexington, he applied his conservation philosophy to the endeavor. Before buying 460 acres of a badly eroded corn farm, Johnson consulted Harold Wallace, the local Soil Conservation Service district conservationist, on what measures would be needed to restore the land. Johnson bought the corn farm and eventually purchased an additional 540 acres.

The conservation plan Johnson agreed to called for his entire 1,000-acre farm to be reseeded to bluegrass, the unanimous choice for horse breeders. According to the plan, all the natural drainages were reshaped and developed into grassed waterways, lined with perforated plastic pipe. Fences were built to permit better land use, and 5 miles of pipeline, serving 35 watering tanks were installed. Soil survey information was used to locate sites for barns and other buildings.

In 1981, the Fayette County Conservation District honored Johnson with a Master Conservationist Award for having completed all of the practices planned for his farm. Johnson used the heavy

equipment skills he had learned in mining to do his own earthmoving work. Although he did the work according to SCS design standards, Johnson did not use any cost-share funds. He is proud to say that his farm means more to him because he did his own conservation work.

To Johnson, practicing soil conservation just makes good horse sense.

Harold Woodward,
public affairs specialist, SCS, Lexington, Ky.

Wildlife Film Available Free to Groups

The Edison Electric Institute has sponsored a wildlife film called "The Chosen Place," which portrays wildlife thriving in the shadow of industrial technology.

The 16 mm, color film demonstrates how electric utility operations have provided unlikely habitats for wildlife throughout the Nation. For example, lakes built to provide cooling water for generation facilities have been adopted by beaver, bass, and many species of waterfowl. The cleared lands provided under power lines are shown to be habitats for birds, mammals, reptiles, and even elk in the high Rocky Mountains of the West.

In addition, the water heated by power plants is depicted as a year-round hatchery for redfish and shrimp on the Texas Gulf Coast and as warm-water havens for birds on otherwise frozen lakes in the North. In many places, hawks and eagles readily use powerline poles and towers as nesting sites and perches.

"The Chosen Place" is the third in a series of wildlife films sponsored by the Edison Electric Institute. The first, "Silver Wires, Golden Wings," is the story of how electric utilities are helping eagles, and the second, "A Second Chance," provides examples of how people and industries can help save endangered species.

All three films are available on free loan to schools, civic clubs, and other groups from Modern Talking Picture Service, Inc., 5000 Park Street North, St. Petersburg, Fla. 33709.

Slide-Tape Series on Silviculture

Scientists at USDA's Forest Service Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo., have developed a series of slide-tape programs on silviculture. The programs are designed to help resource specialists understand and apply the most appropriate silvicultural systems for the major Central Rockies timber types.

The programs are: (1) Overview of Silvicultural Systems in the Central Rocky Mountains; (2) Silviculture of Lodgepole Pine in the Central Rocky Mountains; (3) Silviculture of Spruce-Fir Forests in the Central Rocky Mountains; (4) Silviculture of Ponderosa Pine in the Central and Southern Rockies; and (5) Silviculture of Aspen in the Central Rockies.

Each slide-tape is accompanied by a brochure that duplicates the script and slides. The brochures are intended to help the resource specialist recall the details of concepts discussed in the presentations. They also offer additional references to research publications on the covered topics.

Single copies of the brochures are available from the Rocky Mountain station. Information on the loan or purchase of these programs, or on bulk orders of the brochures, can be obtained from: Public Affairs Officer, USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, 240 West Prospect, Fort Collins, Colo. 80526.

These presentations can be shown on most cassette tape recorders with capabilities of reading slide change cues (at 1 KHz), and transmitting those cues to an attached slide projector.

REPHLEX To Aid Nation's Water Projects

Any project that concerns the Nation's water supplies now can have instant access to 50 years of hydrologic data compiled by researchers of the U.S. Department of Agriculture's (USDA) Agricultural Research Service (ARS).

All that's required is a quick REPHLEX—or REtrieval Procedures for HydroLogic Data from ARS Experimental Watersheds.

REPHLEX is a new computer system for gaining direct telephone access to the ARS Hydrologic Data Bank stored at the USDA's Washington, D.C., Computer Center (WCC). According to ARS computer specialists Jane Thurman and Ralph Roberts, no formal computer training is necessary to use the REPHLEX system, though there will be a

service charge to users of the WCC, related to length of time engaged.

A "REPHLEX User's Guide" has recently been published by the ARS Water Data Laboratory at Beltsville, Md.

Research scientists, engineers, and planners require hydrologic data to determine watershed drainage and runoff, streamflow rates under various conditions, agricultural water supplies, and the design of dams, highways, and other structures. The data bank accessible by REPHLEX primarily contains precipitation and runoff records from approximately 300 watersheds around the United States. Also available (in published form) is information from comprehensive studies of over 500 typical watersheds, including most of the 300 studies for which data are stored.

"Water or the lack of it in some cases

has become a popular issue. And, with increased research in computerized, mathematical modeling to predict floods, certain types of water pollution, etc., the REPHLEX system gets appropriate data to users in a timely fashion," explains J. B. Burford, chief of the Water Data Laboratory, which is responsible for programming the ARS Hydrologic Data Bank.

For many watersheds, the data bank also includes information on land use, vegetation, and cover conditions as well as soils, topography, geology, and climatological data. Most of this information is also available in published form.

To obtain a copy of the "REPHLEX User's Guide," contact the ARS Water Data Laboratory, Room 236, Bldg. 007, Beltsville, Md. 20705, or call (301) 344-3550.

Mississippi Farmers Sold on No-Till



These two fields in Prentiss County, Miss., are similar in size, degree of slope, and soil type. Both fields were planted to corn in the last week of April 1983. The field on the left was conventionally tilled, and the one on the right was planted using no-till. On May 2, 1983, the day after an extremely heavy rain, W. R. Sweeney, who owns the field on the left, stands amid sheet, rill, and small gully erosion that cost him an



estimated 20 tons of soil per acre. At right, Sweeney and Prentiss County Soil and Water Conservation District Commissioner Dalton Garner examine the no-till planted field owned by Sweeney's son, Johnny. The no-till field lost less than 1 ton of soil per acre. The Sweeneys said that they are sold on no-till for controlling soil erosion.

Moving?

Send present mailing label and new address including zip code to:

U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 2890, Room 0213-S
Washington, D.C. 20013

Official Business
Penalty for private use, \$300



AgEvents 1984

March	18-24	National Wildlife Week
	20	National Agriculture Day
April	22-28	Keep America Beautiful Week
	22	National Arbor Day
May	2-3	International Land, Pasture, and Range Judging Contest
	27-June 3	Soil Stewardship Week
June	5	World Environment Day
September	16-22	National Farm Safety Week
	22	National Hunting and Fishing Day
October	7-13	National 4-H Week
	16	World Food Day
November	16-22	National Farm City Week

New Publications

Minimum Tillage Farming/ No-Tillage Farming

by William A. Hayes
and H. M. Young, Jr

One half of this book is bound upside down in relation to the other half. This enables the reader to easily turn to either the section on minimum tillage or the section on no-till. Each section is written in practical down-to-earth language.

In the 29 chapters of the book, the authors compare many different conventional, minimum, and no-tillage systems in exacting detail. For example, one chapter deals entirely with no-tilling of small grains—a proven idea today that was only a dream 10 years ago.

In addition, the book features the personal tillage experiences

of 55 farmers located around the country

Photographs, tables, and graphs add much information to the already detailed text.

To order a copy of this 372-page book, send \$18.95 (plus \$1.95 for postage and handling, Wisconsin residents must add 5% sales tax), to No-Till Farmer, Dept. NR, P.O. Box 624, Brookfield, Wis. 53005.

Handbook of Water Harvesting

by the U.S. Department of
Agriculture, Agricultural
Research Service

Water harvesting, the collection and storage of water from an area that has been treated to increase precipitation runoff, is a method of providing water for animals and domestic use in areas where other means of water supply are not available or feasible to develop. Many

methods and materials for precipitation collection and storage have been developed, but the descriptions are scattered in various scientific, popular, and user-oriented publications.

This handbook presents a guide for designing, selecting materials for, installing, and maintaining water-harvesting systems. All methods and materials described have been used for supplying water for domestic animals, wildlife, and with modifications, for domestic or household use.

Copies of this publication (Agriculture Handbook Number 600), are available for \$4 from the U.S. Government Printing Office, Washington, D.C. 20402; or call the GPO order desk at (202) 783-3238 for charge orders.

Recent Soil Surveys Published

by the Soil Conservation Service

Colorado: Grand County and Huerfano County.

Connecticut: New London County.

Mississippi: Lauderdale County.

Nevada: Washoe County.

New Mexico: Chaves County.

Oregon: Multnomah County.

Wyoming: Washakie County.